Attachment "G"

SBCA TREE CONSULTING

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Date: November 2, 2011

To: Benny Ng, Assistant Engineer
Public Works Department
950 West Mall Square, Room 110
Alameda, CA 94501-7575

Subject: Impacts of installation of concrete pad and fence to adjacent tree

Location: 609 Dublin Way

Species: American Sweet Gum *(Liquidambar styraciflua)*

Assignment: *Arborist was requested to assess the impact of the installation of a concrete pad and fencing to adjacent tree*

Summary

The *Liquidambar* will be impacted as close as one foot from the base of the tree by the installation of a six foot high fence. A concrete generator pad will come three feet from the tree and excavation will be 1.5 feet deep.

The impending conflict between tree and fence is the most noteworthy concern, although the large mature size attained by the *Liquidambar* creates a significant potential for future displacement of the slab as well. Furthermore, the tree is presently located four feet from the adjacent walkway and it is reasonable to predict there will be root related hardscape damage if the tree remains. It is recommended that the tree be removed and replaced with a more appropriate species for the location.

Tree and Site Description

The *Liquidambar* tree is located in a large planting area between sidewalk and resident fence. The sidewalk exists four feet from the tree base. The tree has a DBH[1] of 3 inches and is approximately 25 feet in height. Health and Structure are both good. Surrounding soil was found to be un-compacted sand with ample moisture. Feeder roots were found to be one foot below grade and larger roots at 18 inches deep.

[1] DBH – Tree **D**iameter measured at **B**reast **H**eight, or 4.5 feet below soil grade.

Analysis and Discussion

Proximity of Fence and Slab to Tree – The proposed fence surrounding the concrete pad will come within one foot from the base of the young American Sweetgum. This species is known in Alameda to grow to 85 feet in height and have a 50 inch DBH, with an even larger root flare. The proposed fencing placement does not provide adequate room for the developing tree. Eliminating the fencing will only postpone future damage as some conflict between tree and slab is expected as the tree matures.

Future Conflict with Hardscape – Currently the tree is located four feet from the adjacent pathway. It can be expected that there will be future root and buttress related sidewalk damage as the tree matures.

Soil Conditions – The sandy soil with adequate moisture provides for ideal rooting conditions and tree growth. The young tree is expected to grow large. The sandy soil does somewhat mitigate the concern of imminent damage to hardscape, as roots are expected to grower deeper.

Tree Species – According to the California Tree Failure Report Program statistics[2], the *Liquidambar* is the 8th most commonly reported genera to suffer failures. The *Liquidambar* is no longer recommended for urban planting due to the brash wood, structural defects, and the buttress flare and root related hardscape damage attributed to this species.

Recommendations

Remove Tree and Replace Tree – The proximity of the liquidambar tree to the proposed fencing and concrete slab makes it inevitable that the fence and slab will be displaced as a result of buttress flare expansion of the tree. It is recommended that the young tree be removed and replaced with a smaller stature tree species.

Replacement Tree Species –The Water Gum *(Tristaniopsis laurina)* is a species more appropriate for the location.

End Report

[2] http://ucanr.org/sites/treefail/CTFRP_Statistics/

Photo Supplement

Photo 1 – *Photo to the left shows the American Sweet Gum. The adjacent hardscape is currently four feet from tree base. Damage to the sidewalk is likely as the roots and buttress grow and mature. The liquidambar tree is not appropriate for such planting locations.*

Photo 2 – *Photo to the left shows the area where the young liquidambar tree is located. The red arrow points to the subject Liquidambar tree.*

End Photo Supplement